MULTIMEDIAUNIVERSITY

FINAL EXAMINATION

TRIMESTER3, 2016/2017 SESSION

TWS2551 –Web Services
(All sections / Groups)

26 MAY 2017
9.00 a.m - 11.00 a.m
(2 Hours)

INSTRUCTIONS TO STUDENTS

1. This question paper consists of 6 pages only.

2. Attempt **ALL** questions. All questions carry equal marks and the distribution of the marks for each question is given.

3. Please write your answers in the Answer Booklet provided.

Question 1

a) Amazon is one of the leading online book company that allows users to search and buy books from various publishers and other suppliers. Explain how Amazon can transform its functionality into services based on Service Oriented Architecture so that the system can be programmed and integrated into various platforms. [4 marks]

b) How does namespace avoids name collision? [1 mark]

c) What is the problem with the following elements?

```
<person>
        <test>female</test>
</person>
```

Rewrite the XML code in order to fix the problem. [2 marks]

d) List down three disadvantages of using an attribute as compared to using an element to store data. [3 marks]

Continued......

Question 2

News ˅   Middle East   Documentaries ˅   Shows ˅   Investigations   Opinion   More

Now: Syria's Civil War   Boko Haram   Journalism Matters   Iran   United States

NEWS | CHINA   7 HOURS AGO

China: Military force won't halt North Korea threat

US put North Korea on notice it won't tolerate any provocation, while Pyongyang threatened a nuclear strike in response.

Sailors conduct flight operations on the aircraft carrier USS Carl Vinson on April 8 [Matt Brown/US Navy via AP]

Military force cannot resolve tension over North Korea, China said on Thursday, while an influential Chinese newspaper urged the North to halt its nuclear programme in exchange for Chinese protection.

a) Write the DTD for the above website. [4 marks]

b) Write the XML Schema that is equivalent to the DTD in question 2(a). [4 marks]

c) Write one (1) XML document that conforms to the DTD in question 2(a). [2 marks]

Question 3

a) Consider the following C# code.

```
[WebMethod]
public double checkCGPA(string studentName, long id)
{
    // implementation omitted
}
```

Write the SOAP request for the above web method. [4 marks]

b) Write the SOAP response for the web method in Question 3(a). [4 marks]

c) Why UDDI is less popular compared to third party repository? [2 marks]

Question 4

```
<?xml version="1.0" encoding="utf-8"?>
<wsdl:definitions xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/"
xmlns:tm="http://microsoft.com/wsdl/mime/textMatching/"
xmlns:soapenc="http://schemas.xmlsoap.org/soap/encoding/"
xmlns:mime="http://schemas.xmlsoap.org/wsdl/mime/" xmlns:tns="http://tempuri.org/"
xmlns:s="http://www.w3.org/2001/XMLSchema"
```

Continued......

```
 xmlns:soap12="http://schemas.xmlsoap.org/wsdl/soap12/"
xmlns:http="http://schemas.xmlsoap.org/wsdl/http/"
targetNamespace="http://tempuri.org/" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
 <wsdl:types>
   <s:schema elementFormDefault="qualified" targetNamespace="http://tempuri.org/">
    <s:element name="Add">
      <s:complexType>
       <s:sequence>
         <s:element minOccurs="1" maxOccurs="1" name="intA" type="s:int" />
         <s:element minOccurs="1" maxOccurs="1" name="intB" type="s:int" />
       </s:sequence>
      </s:complexType>
    </s:element>
    <s:element name="AddResponse">
      <s:complexType>
       <s:sequence>
         <s:element minOccurs="1" maxOccurs="1" name="AddResult" type="s:int" />
       </s:sequence>
      </s:complexType>
    </s:element>
    <s:element name="Subtract">
      <s:complexType>
       <s:sequence>
         <s:element minOccurs="1" maxOccurs="1" name="intA" type="s:int" />
         <s:element minOccurs="1" maxOccurs="1" name="intB" type="s:int" />
       </s:sequence>
      </s:complexType>
    </s:element>
    <s:element name="SubtractResponse">
```

Continued......

```
<s:complexType>
  <s:sequence>
    <s:element minOccurs="1" maxOccurs="1" name="SubtractResult" type="s:int"
/>
  </s:sequence>
</s:complexType>
</s:element>
<s:element name="Multiply">
<s:complexType>
  <s:sequence>
    <s:element minOccurs="1" maxOccurs="1" name="intA" type="s:int" />
    <s:element minOccurs="1" maxOccurs="1" name="intB" type="s:int" />
  </s:sequence>
</s:complexType>
</s:element>
<s:element name="MultiplyResponse">
<s:complexType>
  <s:sequence>
    <s:element minOccurs="1" maxOccurs="1" name="MultiplyResult" type="s:int"
/>
  </s:sequence>
</s:complexType>
</s:element>
<s:element name="Divide">
<s:complexType>
  <s:sequence>
    <s:element minOccurs="1" maxOccurs="1" name="intA" type="s:int" />
    <s:element minOccurs="1" maxOccurs="1" name="intB" type="s:int" />
  </s:sequence>
```

Continued......

```
      </s:complexType>
     </s:element>
    <s:element name="DivideResponse">
     <s:complexType>
      <s:sequence>
       <s:element minOccurs="1" maxOccurs="1" name="DivideResult" type="s:int" />
      </s:sequence>
     </s:complexType>
    </s:element>
   </s:schema>
  </wsdl:types>
  <wsdl:service name="Calculator">
   <wsdl:port name="CalculatorSoap" binding="tns:CalculatorSoap">
    <soap:address location="http://www.dneonline.com/calculator.asmx" />
   </wsdl:port>
   <wsdl:port name="CalculatorSoap12" binding="tns:CalculatorSoap12">
    <soap12:address location="http://www.dneonline.com/calculator.asmx" />
   </wsdl:port>
  </wsdl:service>
 </wsdl:definitions>
```

a) Refer to the WSDL in Question 4. How many functions were listed in the WSDL? List all the methods together with the parameters and the return type. [5 marks]

b) Refer to the WSDL in Question 4. What is the class name of the service and where is the service located? [2 marks]

c) How does the quality of service being measured? [3 marks]

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